

FIG.1

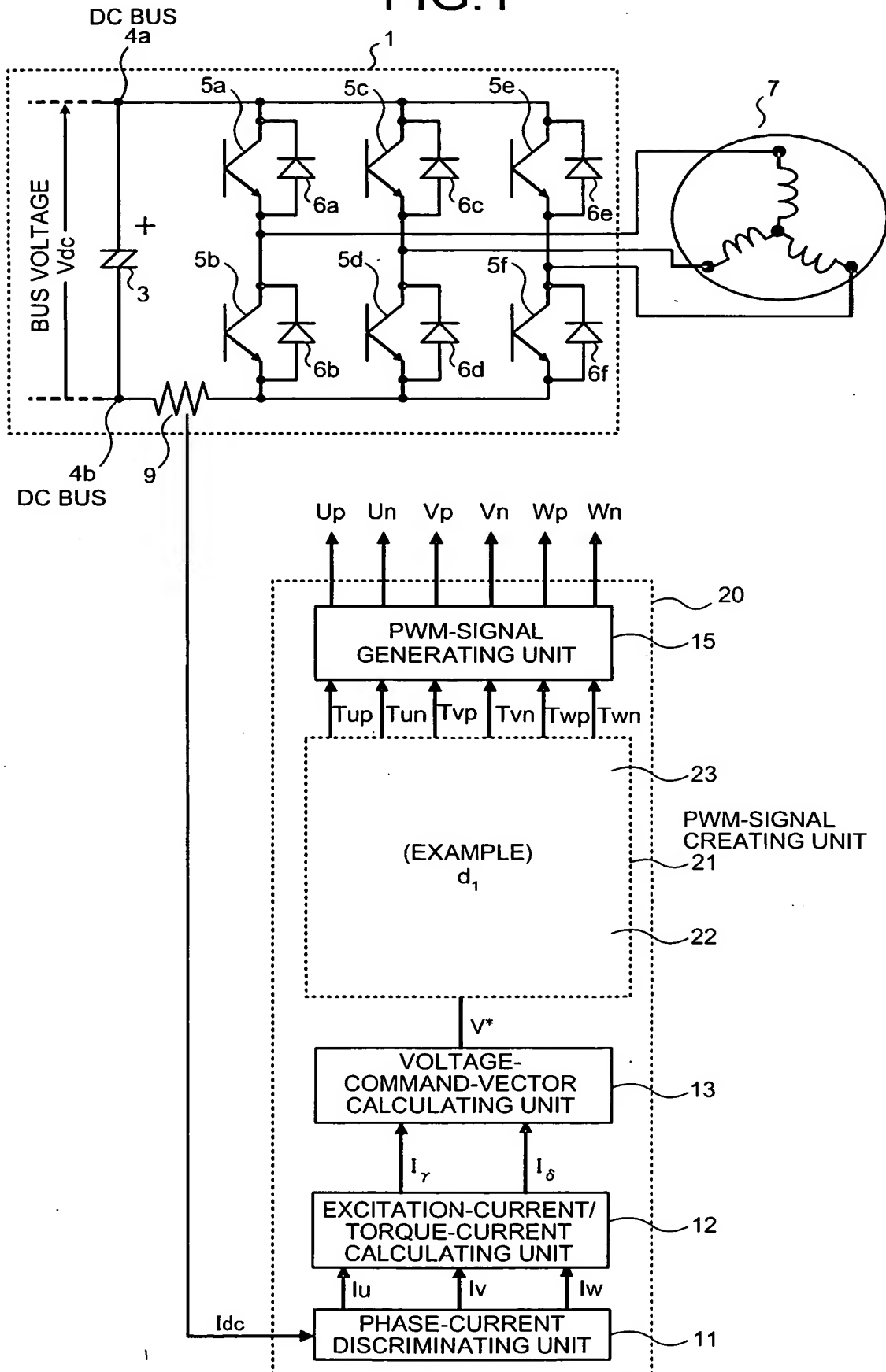


FIG.2A

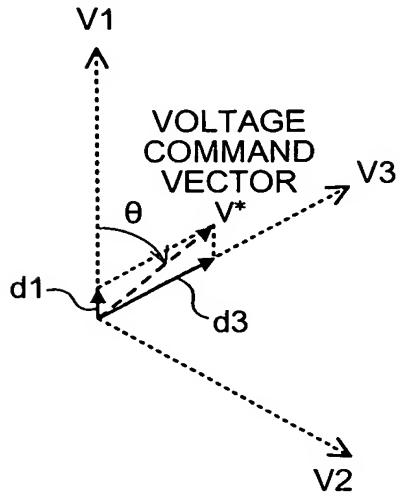


FIG.2B

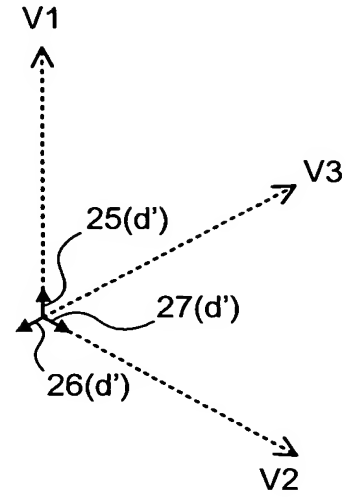


FIG.2C

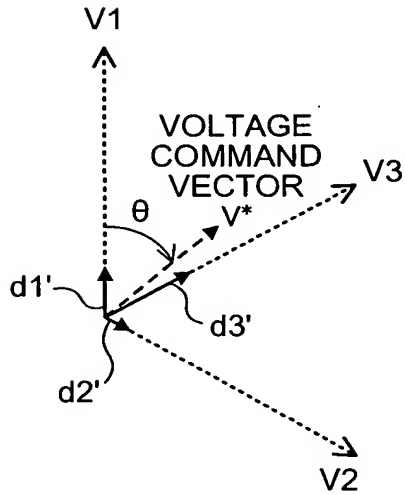


FIG.3A

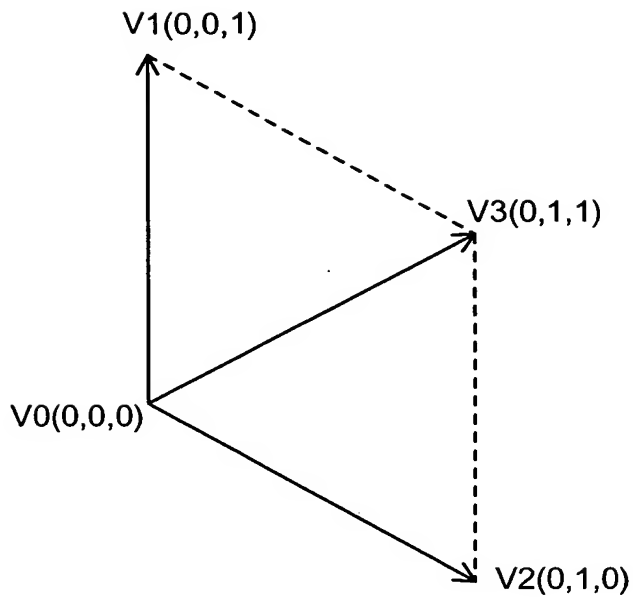


FIG.3B

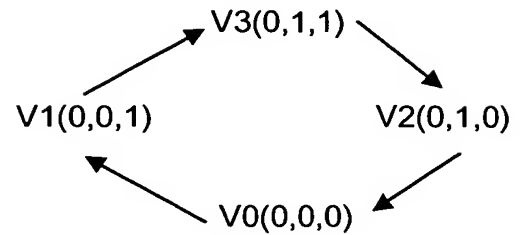


FIG.4

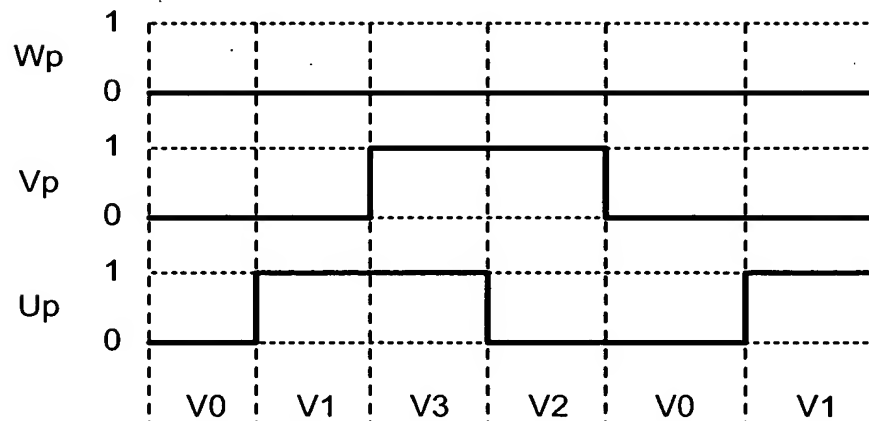


FIG.5A

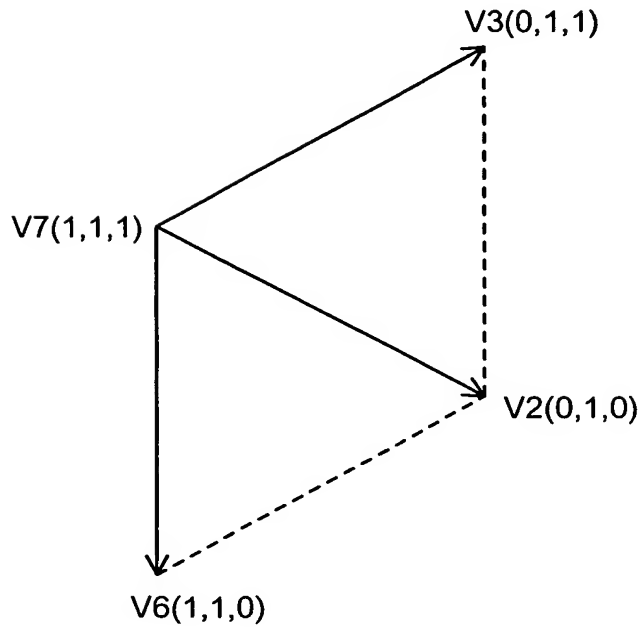


FIG.5B

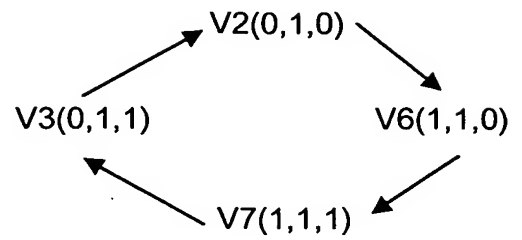


FIG.6

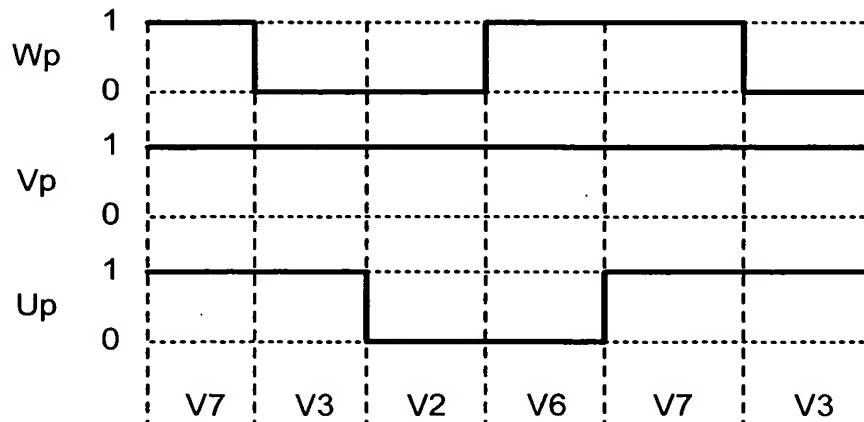


FIG.7A

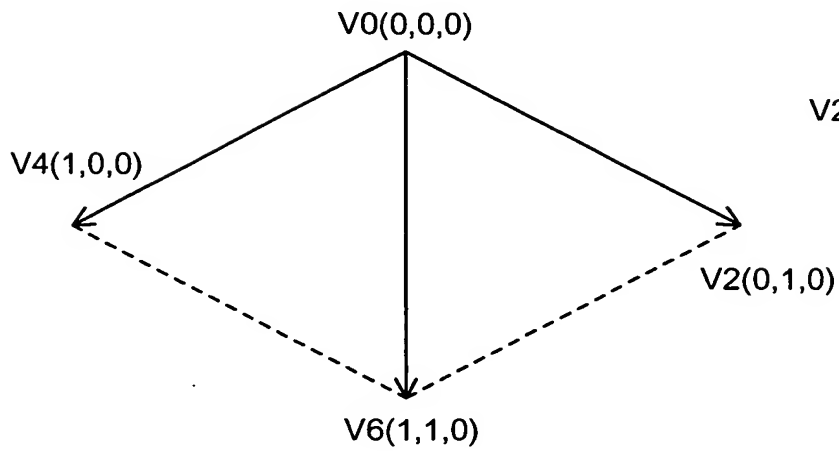


FIG.7B

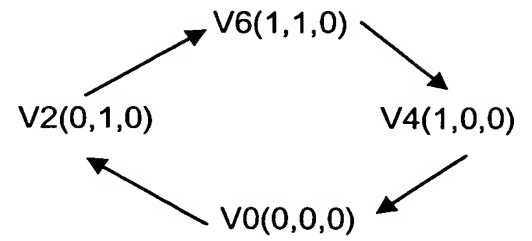


FIG.8

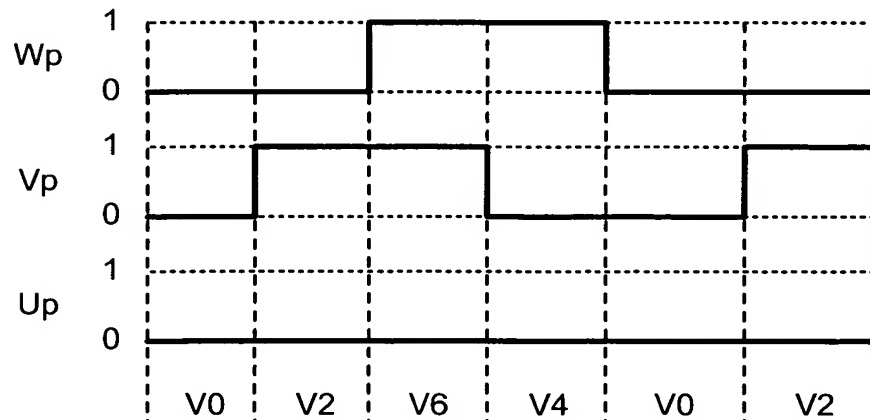


FIG.9A

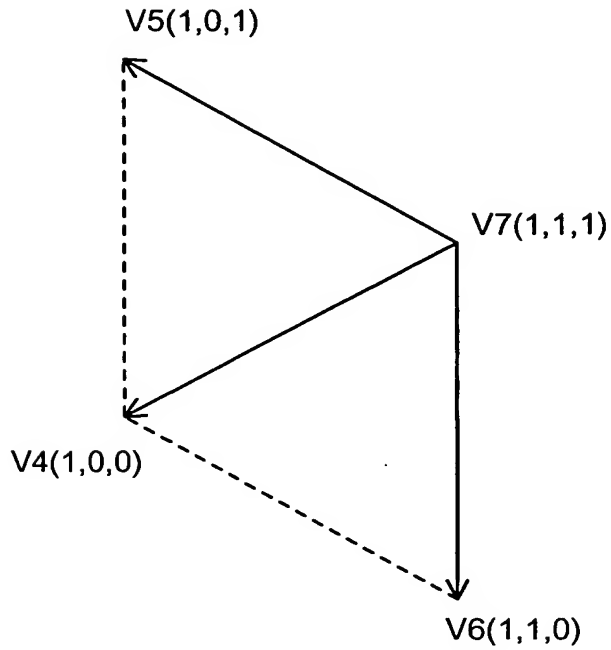


FIG.9B

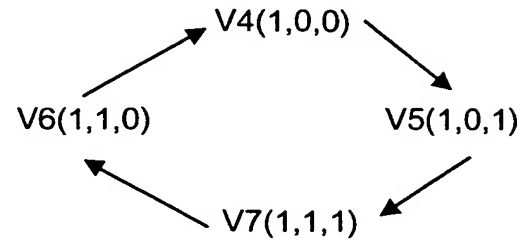


FIG.10

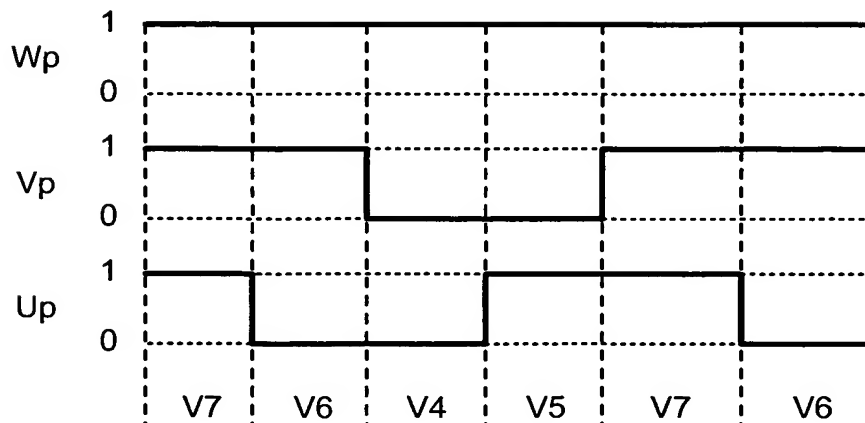


FIG.11A

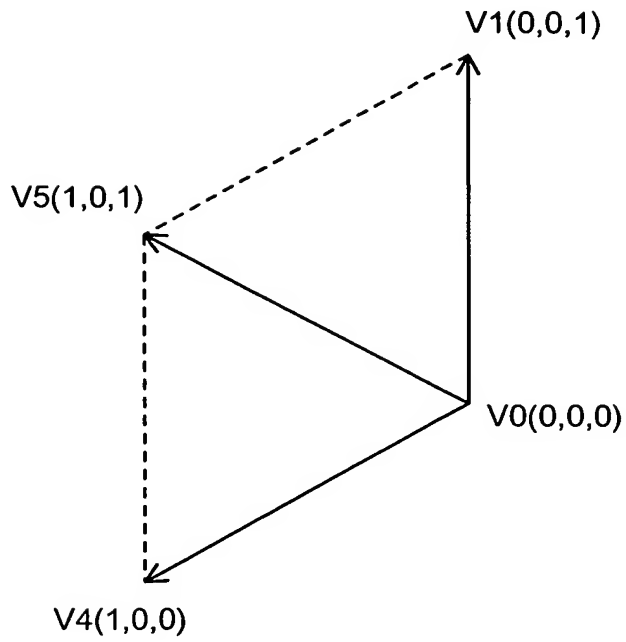


FIG.11B

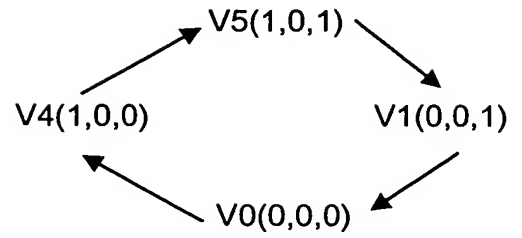


FIG.12

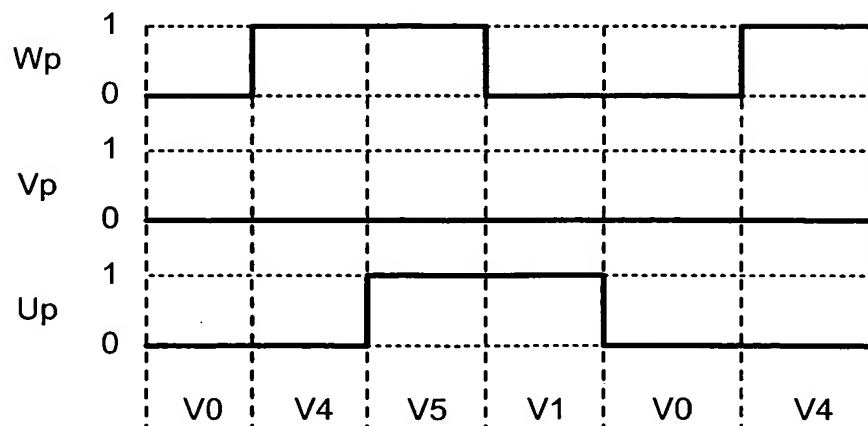


FIG.13A

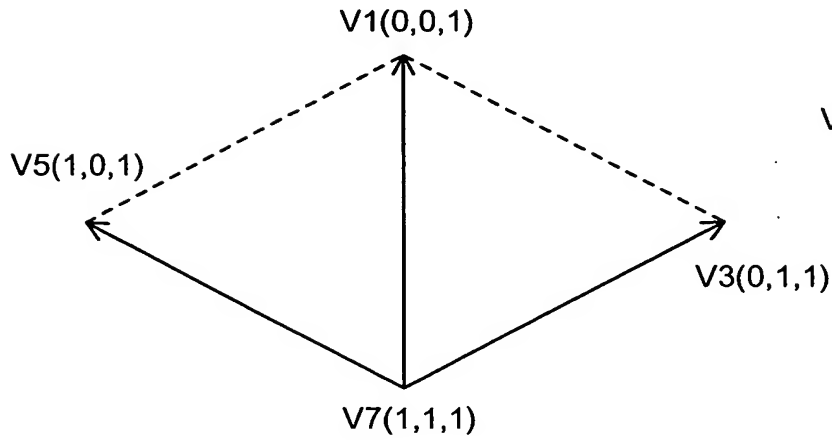


FIG.13B

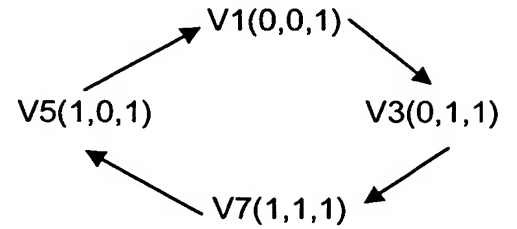


FIG.14

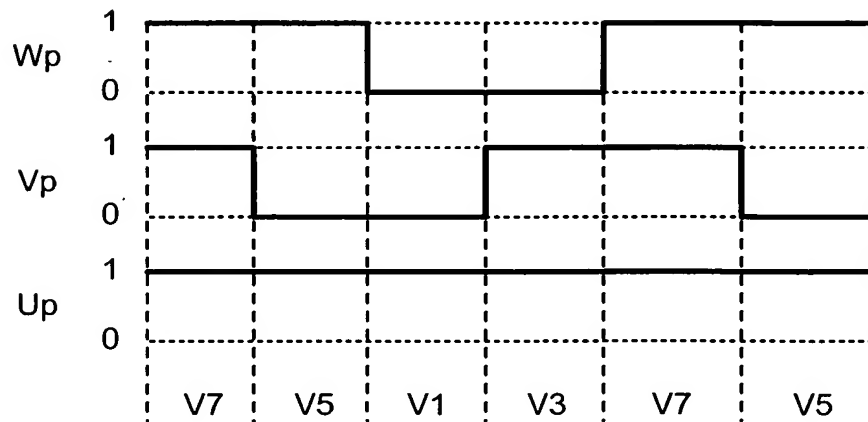


FIG.15A

INVERTER ROTATION ANGLE	PATTERN
$0^\circ \leq \theta \leq 30^\circ$	#6
$30^\circ \leq \theta \leq 90^\circ$	#1
$90^\circ \leq \theta \leq 150^\circ$	#2
$150^\circ \leq \theta \leq 210^\circ$	#3
$210^\circ \leq \theta \leq 270^\circ$	#4
$270^\circ \leq \theta \leq 330^\circ$	#5
$330^\circ \leq \theta \leq 360^\circ$	#6

FIG.15B

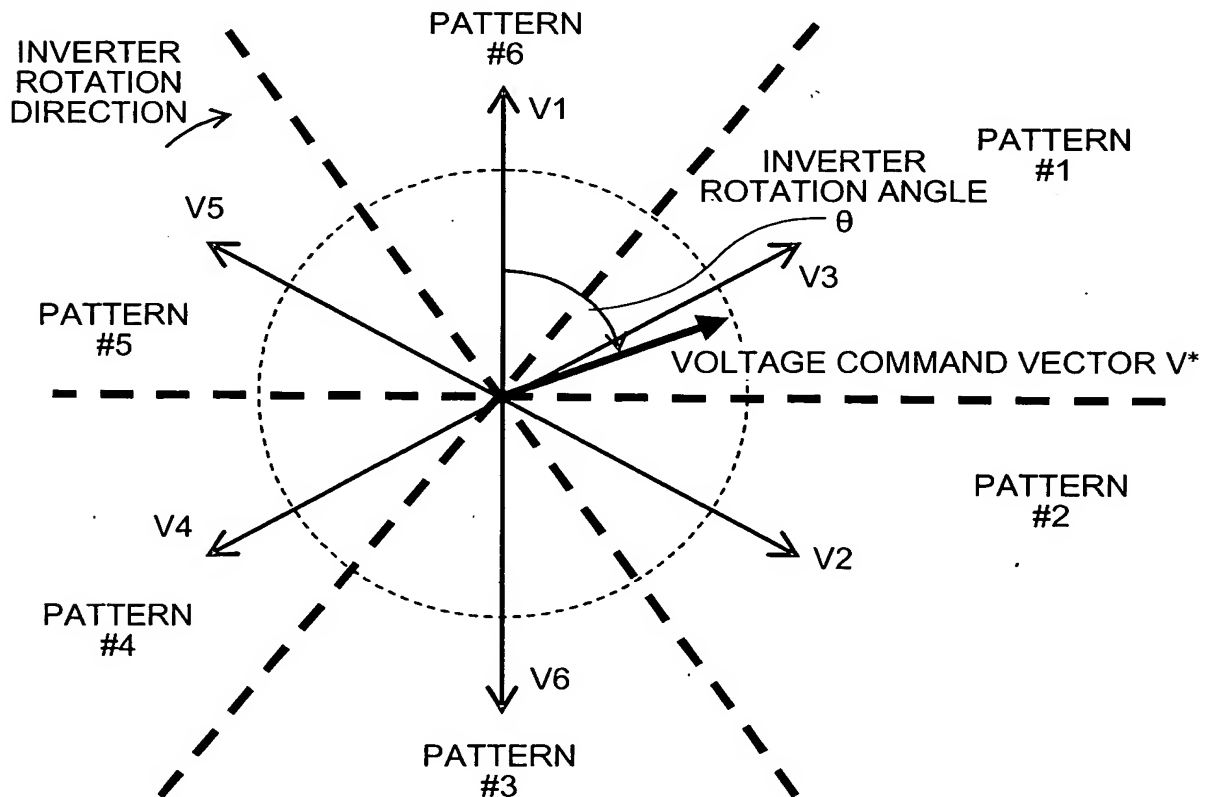


FIG.16A

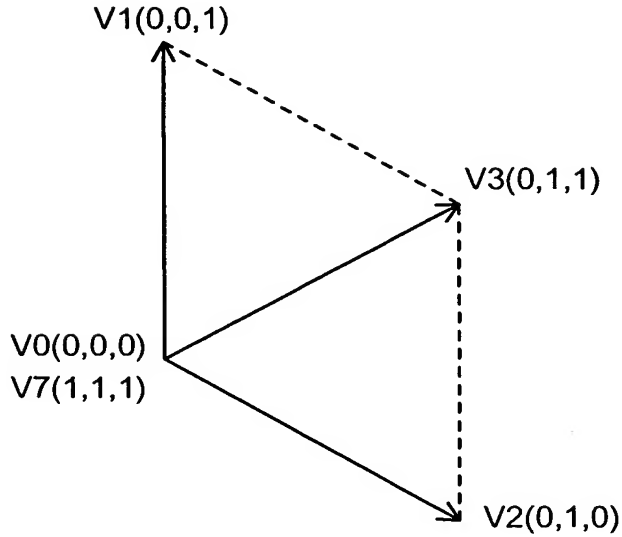


FIG.16B

- (a) $V_7 \Rightarrow V_3 \Rightarrow V_1 \Rightarrow V_0 \Rightarrow V_2$
 (b) $V_7 \Rightarrow V_3 \Rightarrow V_1 \Rightarrow V_0 \Rightarrow V_2 \Rightarrow V_3$
 (c) $V_7 \Rightarrow V_3 \Rightarrow V_2 \Rightarrow V_0 \Rightarrow V_1$
 (d) $V_7 \Rightarrow V_3 \Rightarrow V_2 \Rightarrow V_0 \Rightarrow V_1 \Rightarrow V_3$

FIG.17A

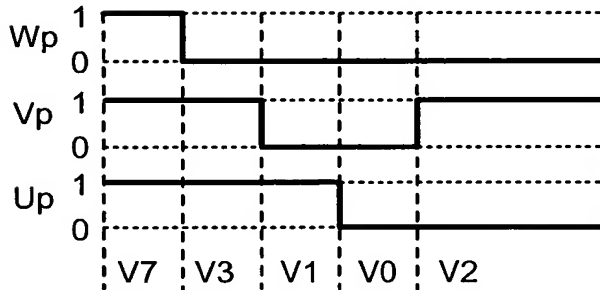


FIG.17B

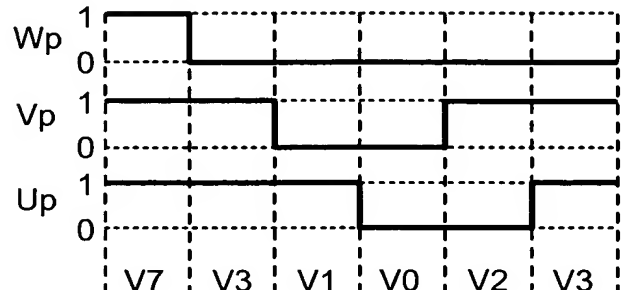


FIG.17C

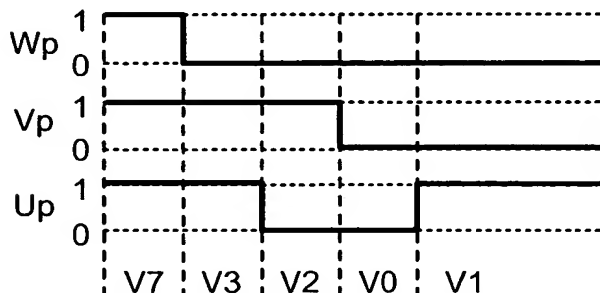


FIG.17D

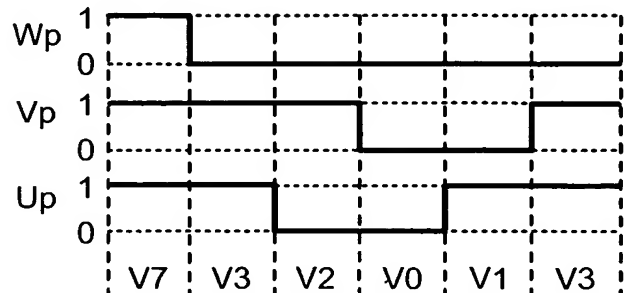


FIG.18A

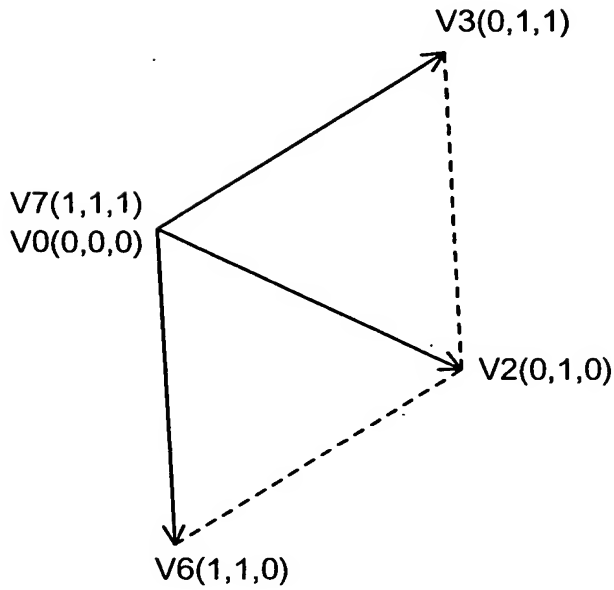


FIG.18B

- (a) $V7 \Rightarrow V3 \Rightarrow V0 \Rightarrow V2 \Rightarrow V6$
- (b) $V7 \Rightarrow V3 \Rightarrow V2 \Rightarrow V0 \Rightarrow V2 \Rightarrow V6$
- (c) $V7 \Rightarrow V6 \Rightarrow V0 \Rightarrow V2 \Rightarrow V3$
- (d) $V7 \Rightarrow V6 \Rightarrow V2 \Rightarrow V0 \Rightarrow V2 \Rightarrow V3$

FIG.19A

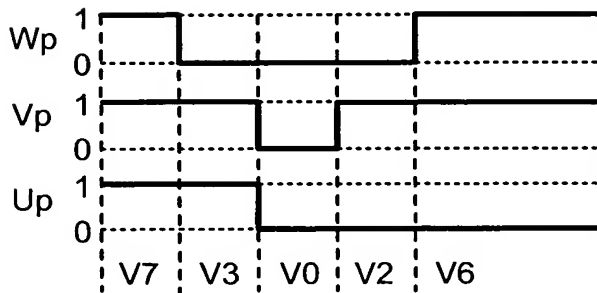


FIG.19B

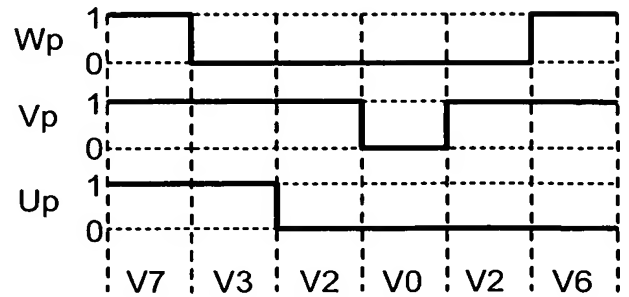


FIG.19C

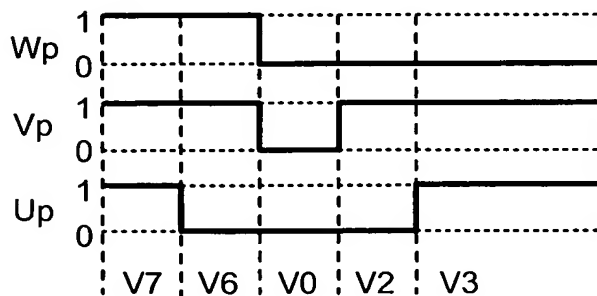


FIG.19D

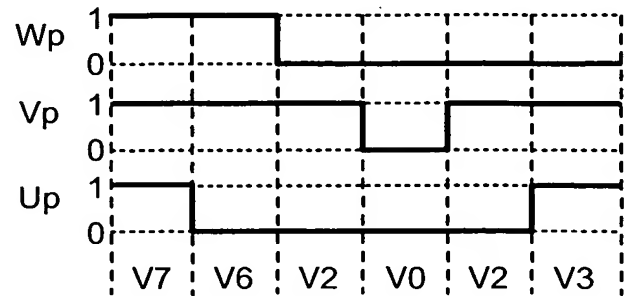


FIG.20A

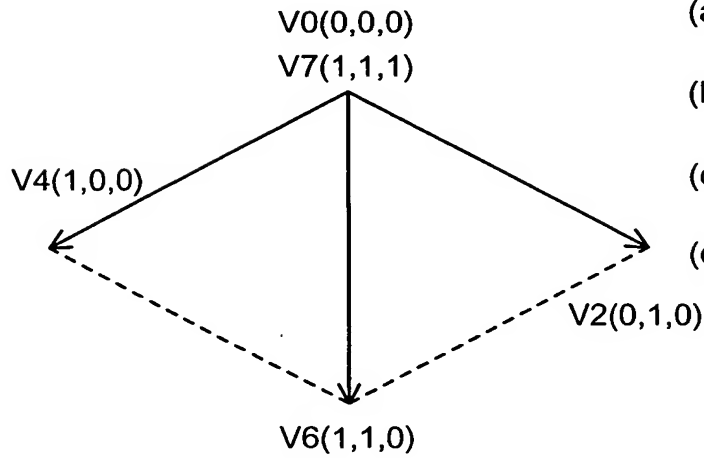


FIG.20B

- (a) $V7 \Rightarrow V6 \Rightarrow V2 \Rightarrow V0 \Rightarrow V4$
- (b) $V7 \Rightarrow V6 \Rightarrow V2 \Rightarrow V0 \Rightarrow V4 \Rightarrow V6$
- (c) $V7 \Rightarrow V6 \Rightarrow V4 \Rightarrow V0 \Rightarrow V2$
- (d) $V7 \Rightarrow V6 \Rightarrow V4 \Rightarrow V0 \Rightarrow V2 \Rightarrow V6$

FIG.21A

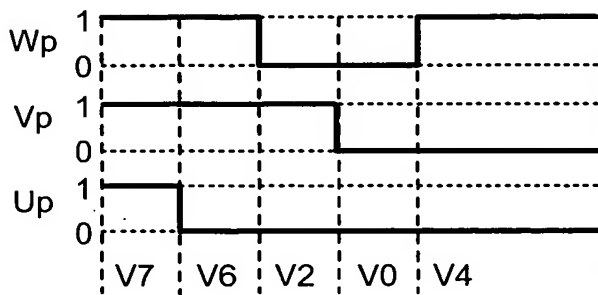


FIG.21B

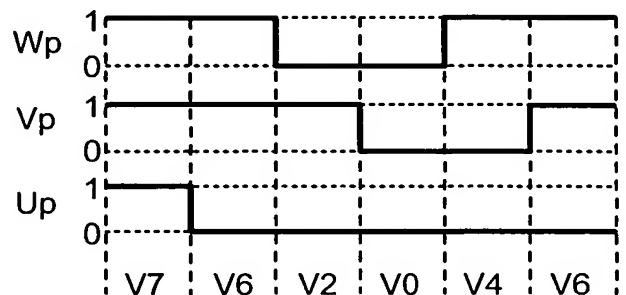


FIG.21C

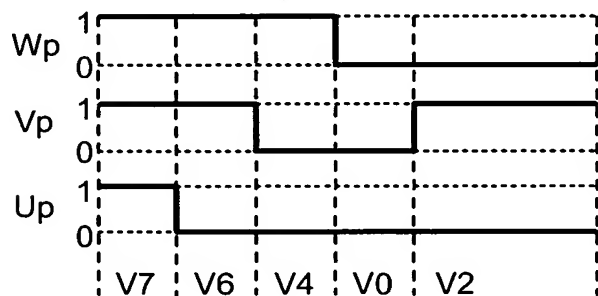


FIG.21D

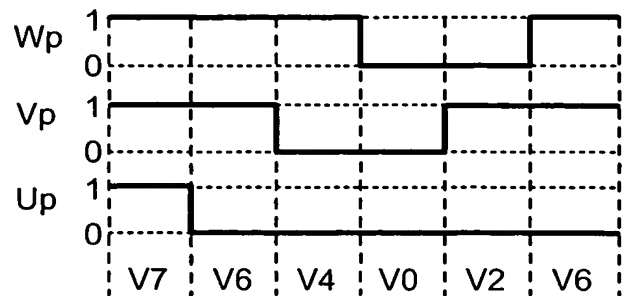


FIG.22A

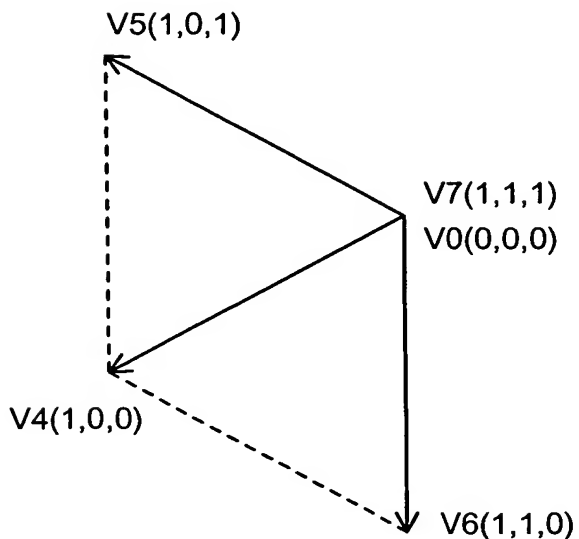


FIG.22B

- (a) $V7 \Rightarrow V6 \Rightarrow V0 \Rightarrow V4 \Rightarrow V5$
- (b) $V7 \Rightarrow V6 \Rightarrow V4 \Rightarrow V0 \Rightarrow V4 \Rightarrow V5$
- (c) $V7 \Rightarrow V5 \Rightarrow V0 \Rightarrow V4 \Rightarrow V6$
- (d) $V7 \Rightarrow V5 \Rightarrow V4 \Rightarrow V0 \Rightarrow V4 \Rightarrow V6$

FIG.23A

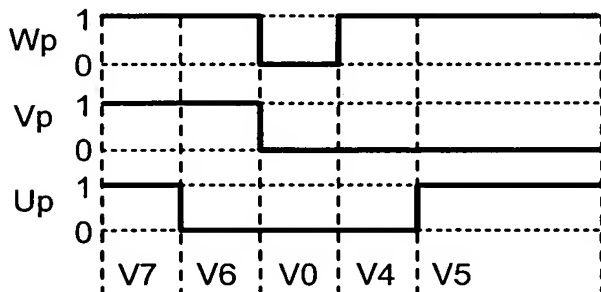


FIG.23B

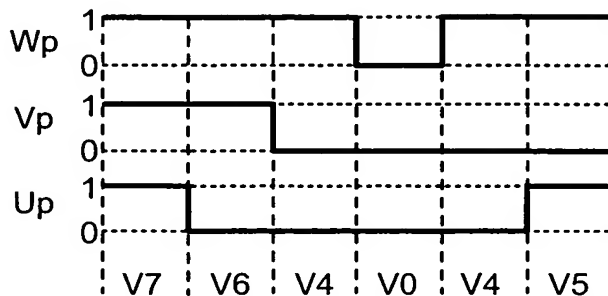


FIG.23C

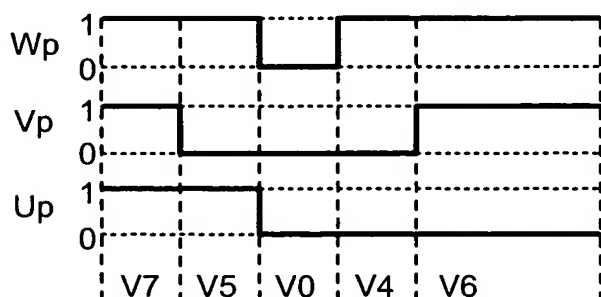


FIG.23D

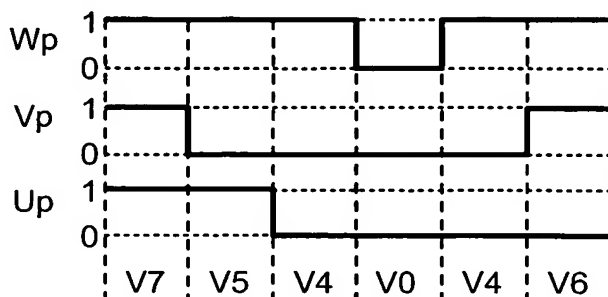


FIG.24A

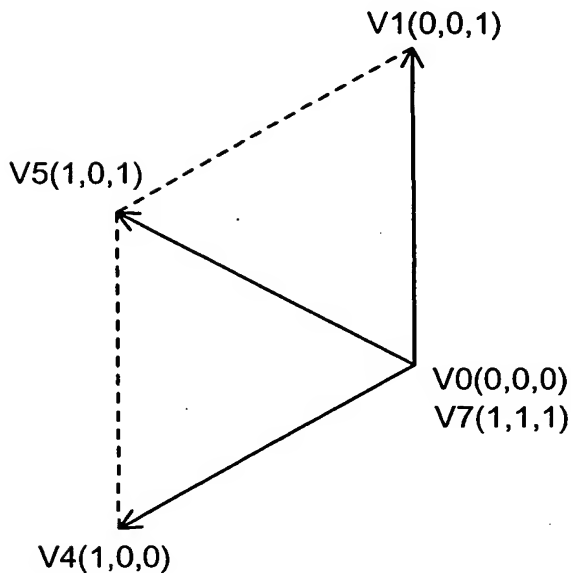


FIG.24B

- (a) $V7 \Rightarrow V5 \Rightarrow V4 \Rightarrow V0 \Rightarrow V1$
- (b) $V7 \Rightarrow V5 \Rightarrow V4 \Rightarrow V0 \Rightarrow V1 \Rightarrow V5$
- (c) $V7 \Rightarrow V5 \Rightarrow V1 \Rightarrow V0 \Rightarrow V4$
- (d) $V7 \Rightarrow V5 \Rightarrow V1 \Rightarrow V0 \Rightarrow V4 \Rightarrow V5$

FIG.25A

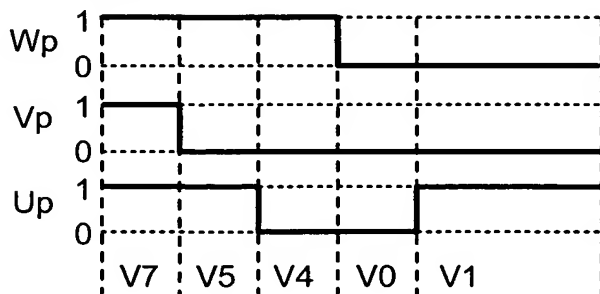


FIG.25B

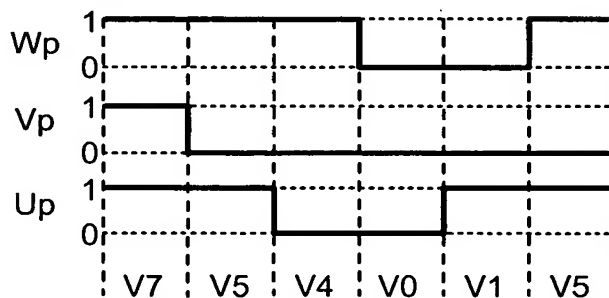


FIG.25C

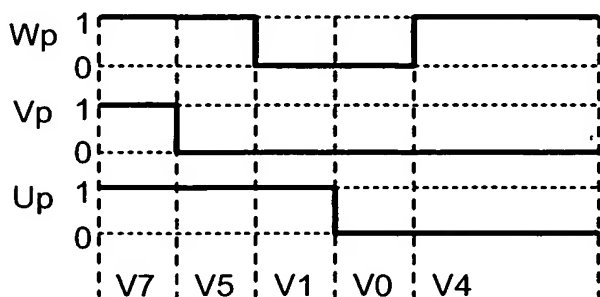


FIG.25D

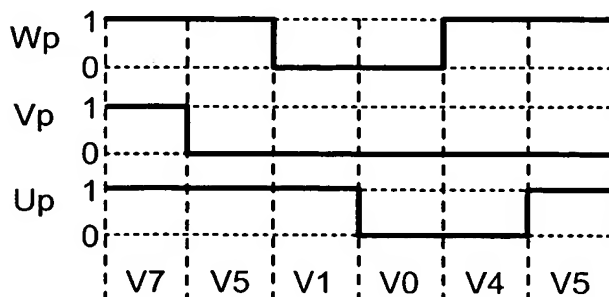


FIG.26A

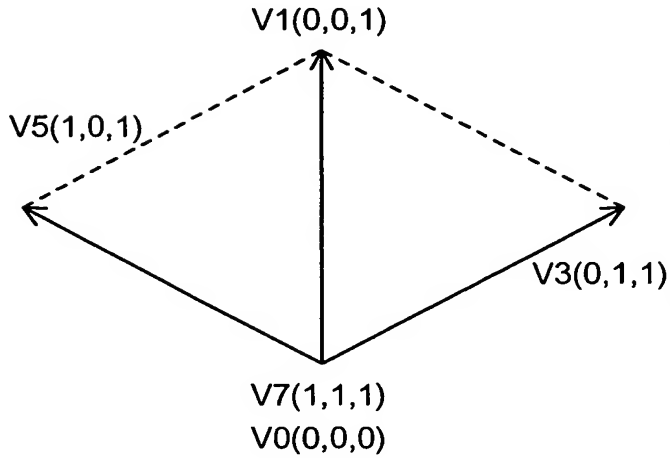


FIG.26B

- (a) $V7 \Rightarrow V5 \Rightarrow V0 \Rightarrow V1 \Rightarrow V3$
- (b) $V7 \Rightarrow V5 \Rightarrow V1 \Rightarrow V0 \Rightarrow V1 \Rightarrow V3$
- (c) $V7 \Rightarrow V3 \Rightarrow V0 \Rightarrow V1 \Rightarrow V5$
- (d) $V7 \Rightarrow V3 \Rightarrow V1 \Rightarrow V0 \Rightarrow V1 \Rightarrow V5$

FIG.27A

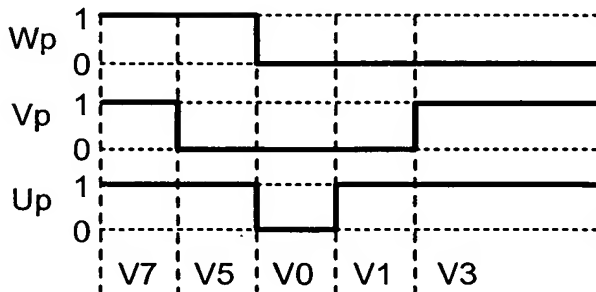


FIG.27B

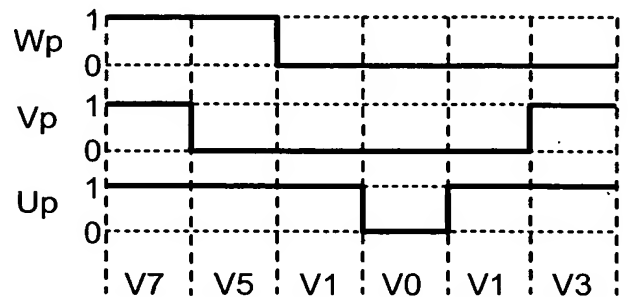


FIG.27C

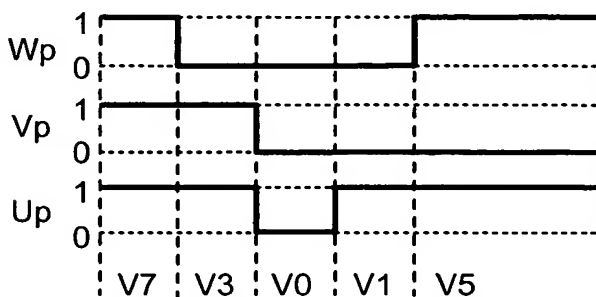


FIG.27D

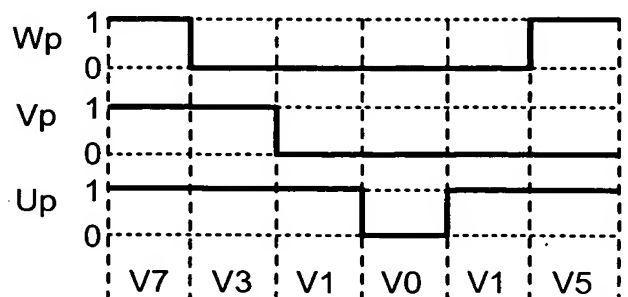


FIG.28A

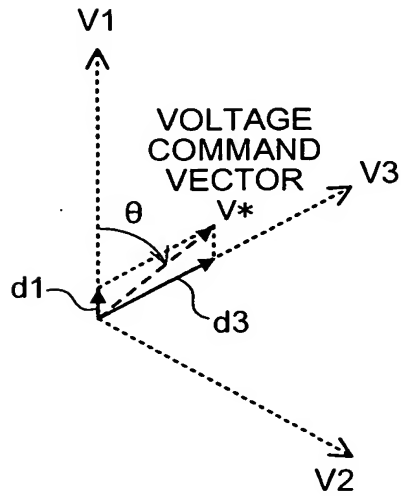


FIG.28B

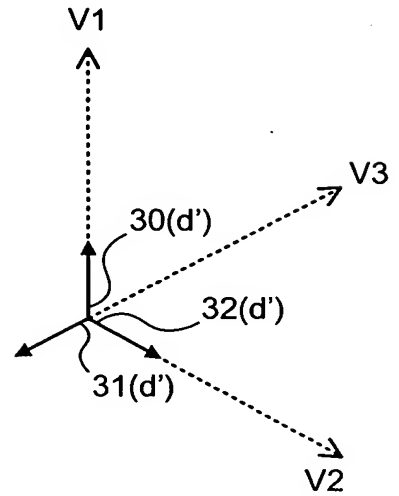


FIG.28C

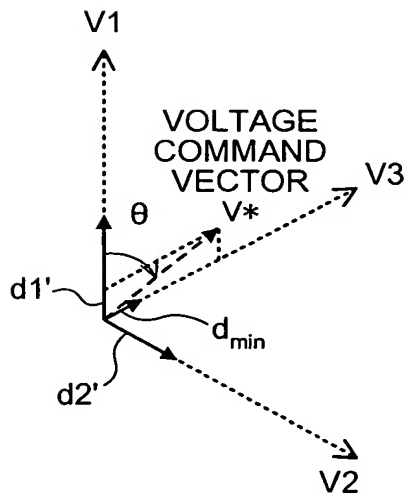


FIG.29A

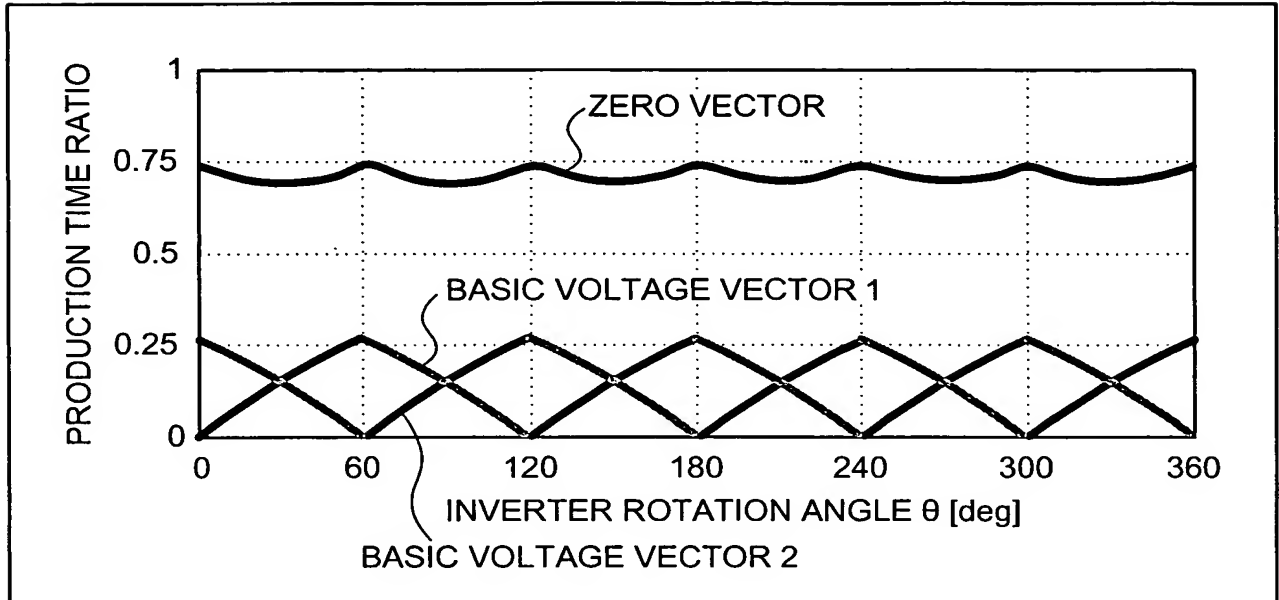


FIG.29B

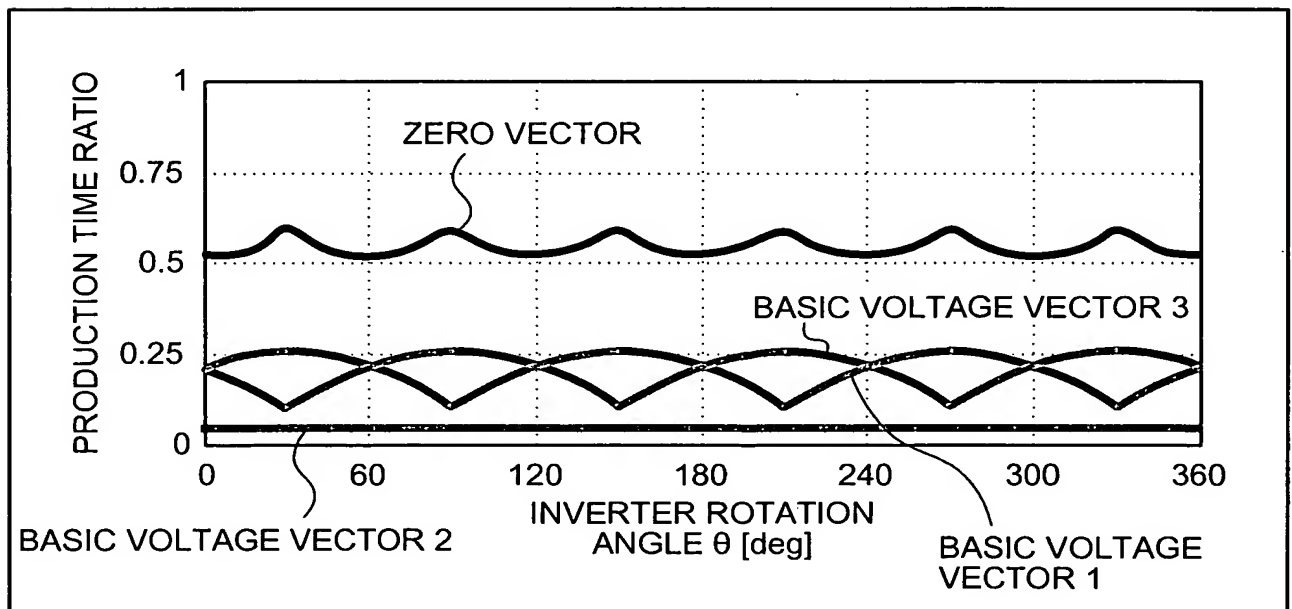


FIG.30A

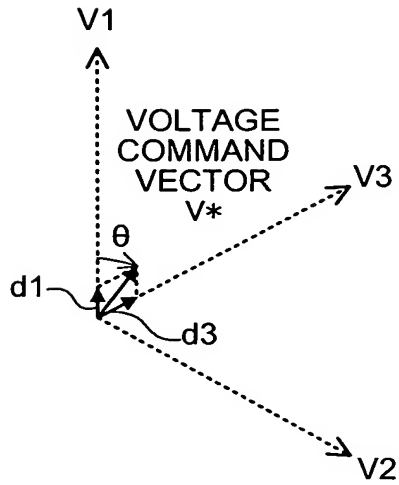


FIG.30B

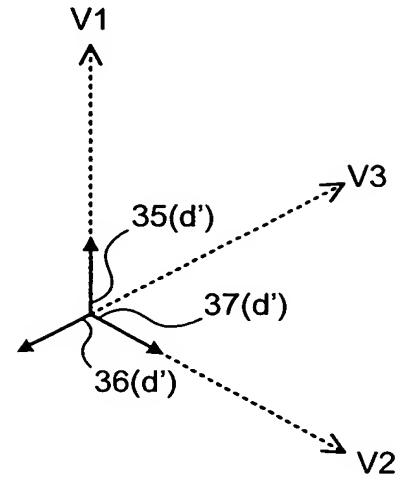


FIG.30C

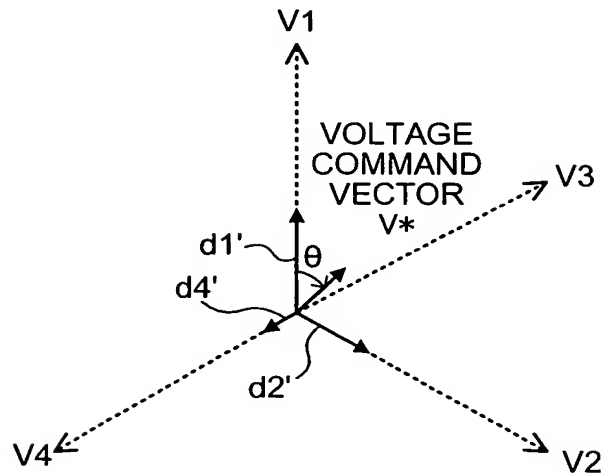


FIG.31A

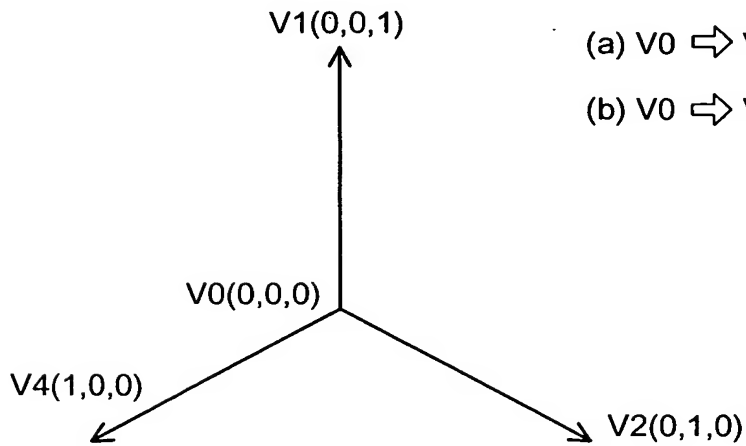


FIG.31B

(a) $V0 \Rightarrow V1 \Rightarrow V0 \Rightarrow V2 \Rightarrow V0 \Rightarrow V4$

(b) $V0 \Rightarrow V1 \Rightarrow V0 \Rightarrow V4 \Rightarrow V0 \Rightarrow V2$

FIG.32A

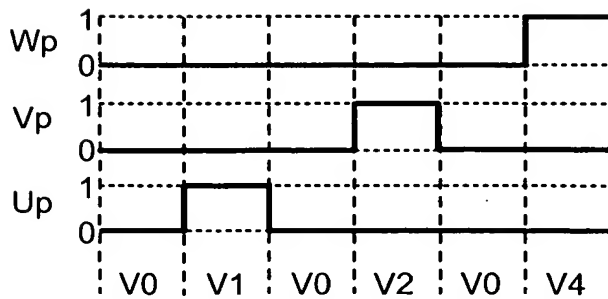


FIG.32B

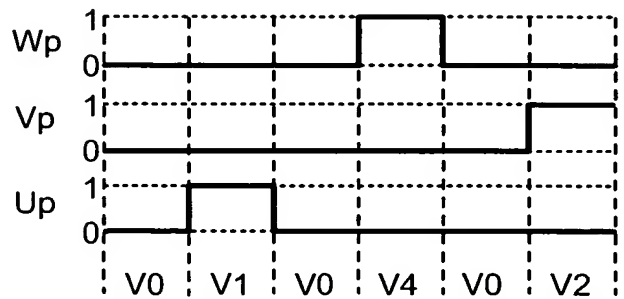


FIG.33A

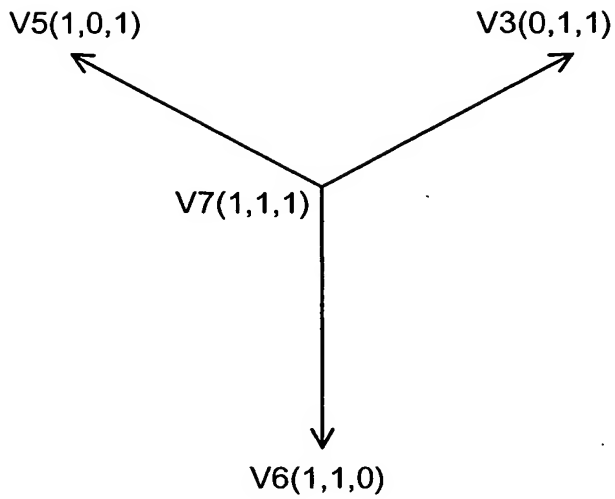


FIG.33B

(a) $V7 \Rightarrow V3 \Rightarrow V7 \Rightarrow V6 \Rightarrow V7 \Rightarrow V5$
 (b) $V7 \Rightarrow V3 \Rightarrow V7 \Rightarrow V5 \Rightarrow V7 \Rightarrow V6$

FIG.34A

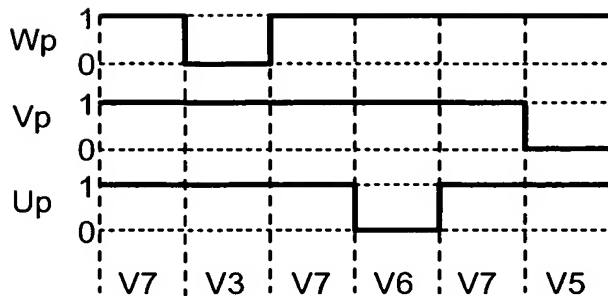


FIG.34B

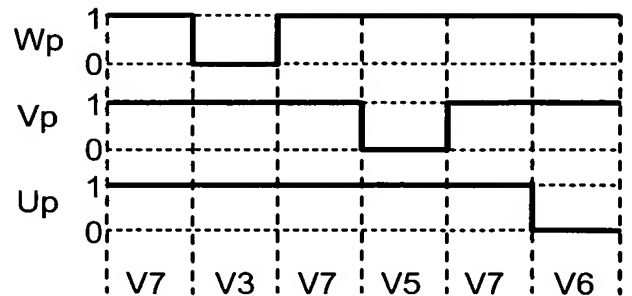


FIG.35A

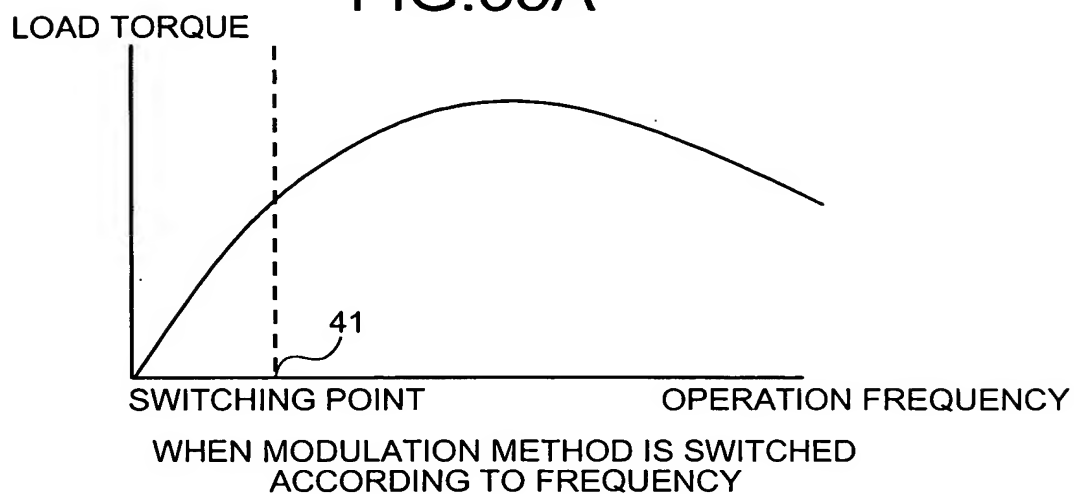


FIG.35B

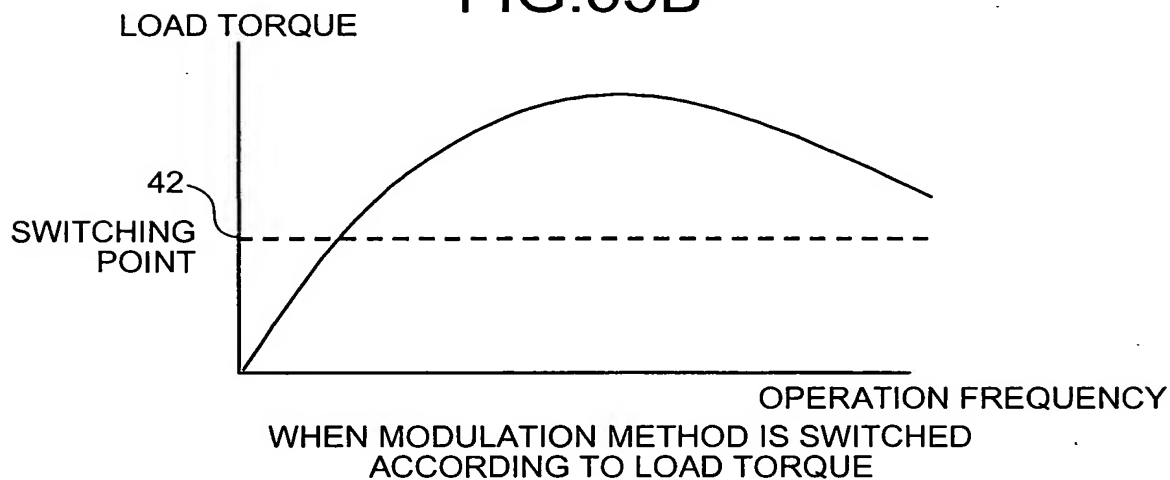
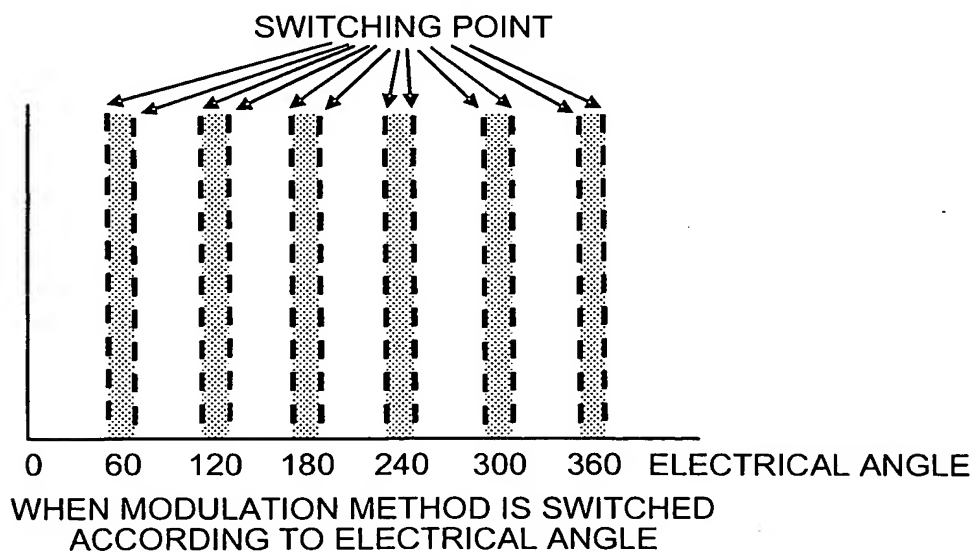


FIG.35C



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FIG.36

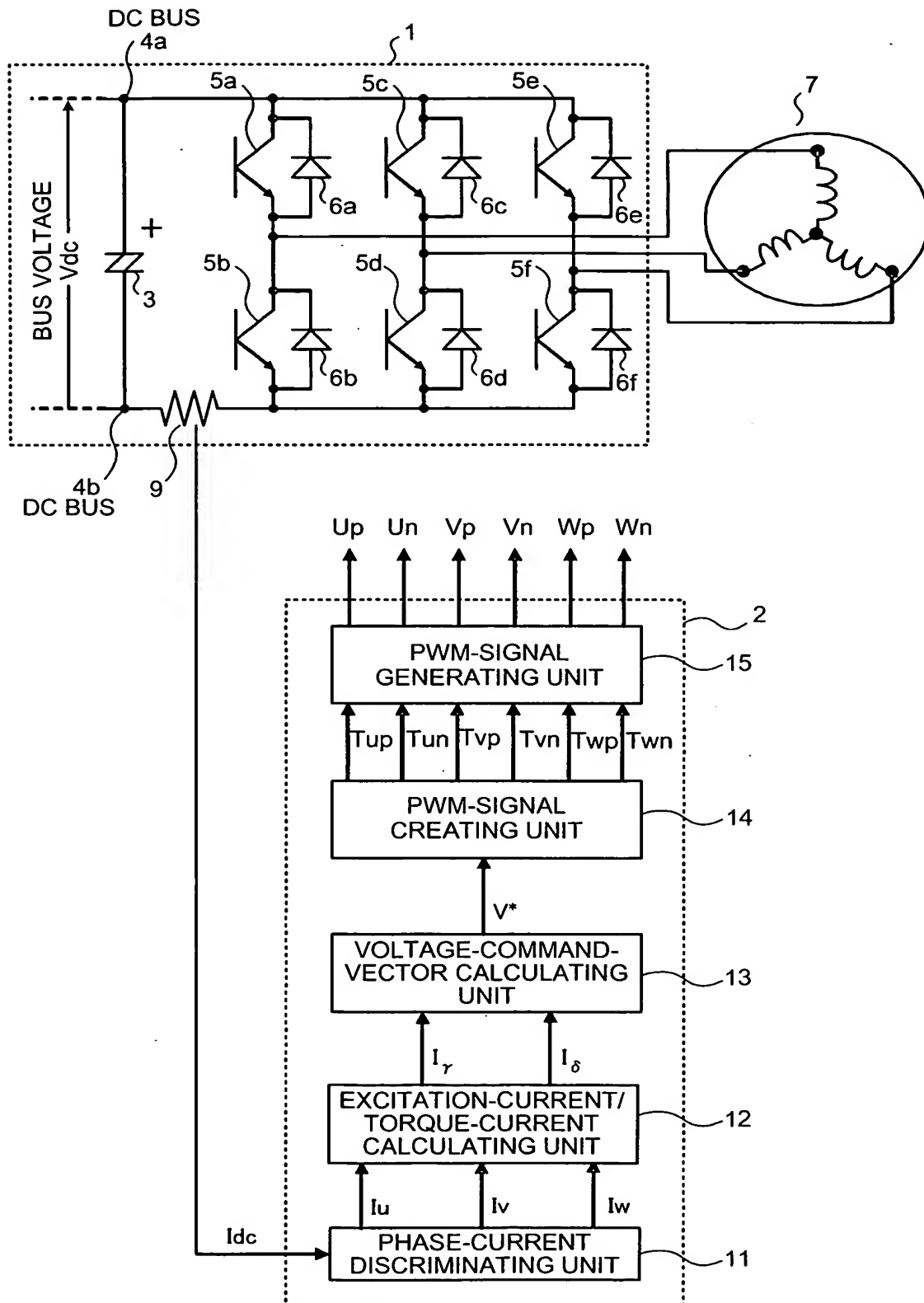


FIG.37

BASIC VOLTAGE VECTOR	Wp (W-PHASE POSITIVE SIDE SWITCHING ELEMENT LOGICAL STATE)	Vp (V-PHASE POSITIVE SIDE SWITCHING ELEMENT LOGICAL STATE)	Up (U-PHASE POSITIVE SIDE SWITCHING ELEMENT LOGICAL STATE)	OBSERVABLE PHASE CURRENT
V0	0	0	0	OBSERVATION IMPOSSIBLE
V1	0	0	1	Iu
V2	0	1	0	Iv
V3	0	1	1	-Iw
V4	1	0	0	Iw
V5	1	0	1	-Iv
V6	1	1	0	-Iu
V7	1	1	1	OBSERVATION IMPOSSIBLE

FIG.38

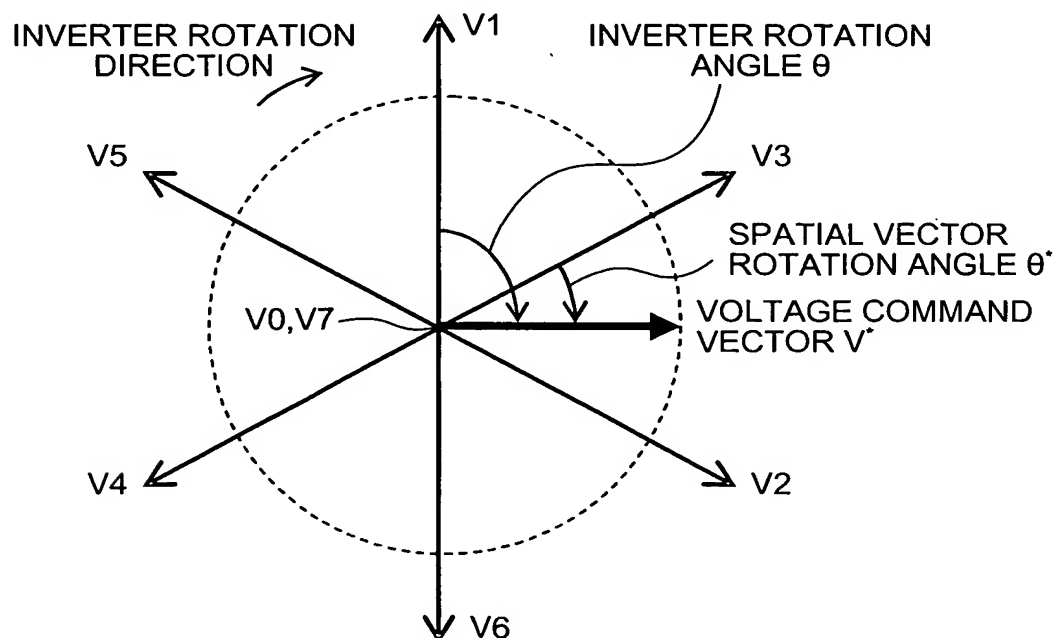


FIG.39A

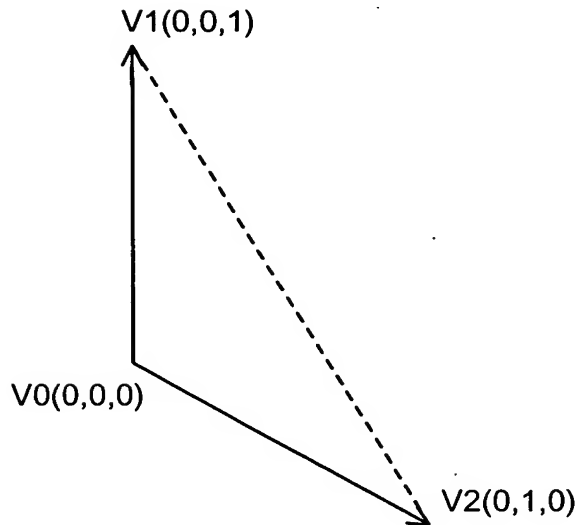


FIG.39B

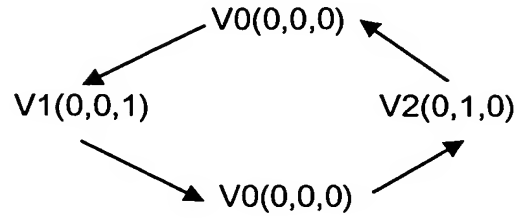


FIG.40

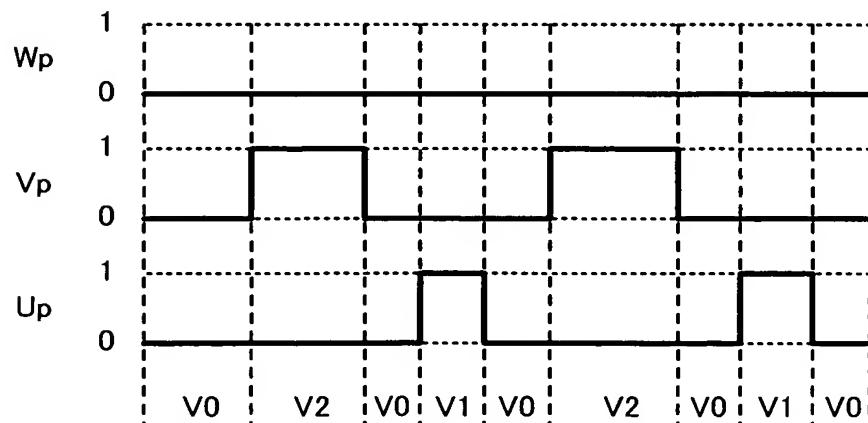


FIG.41A

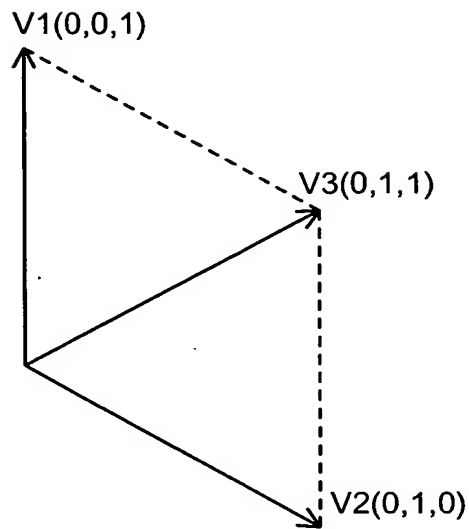


FIG.41B

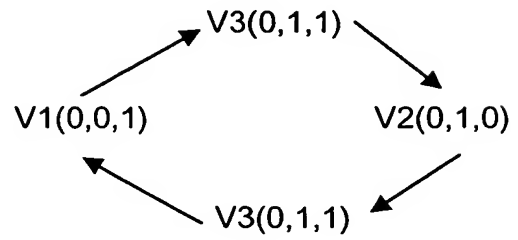


FIG.42

